AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): A method for recovering molybdenum, comprising ~~the steps of~~:

1) dispersing a molybdenum-containing material which ~~contains~~ comprises at least molybdenum,

[[A]] element A [[(]] which is selected from the group consisting of phosphorus, ~~and/or~~ arsenic[[)]] and mixtures thereof, and

[[X]] element X which is [[(]] at least one element selected from the group consisting of potassium, rubidium, cesium and thallium[[)]],

in water and adding alkali, to ~~make~~ adjust a pH of ~~the~~ a resultant mixed liquid to 8 or more;

2) ~~adjusting pH of the resultant mixed liquid to fall within the range of from 6 to 12 followed by~~ adding a compound ~~containing~~ comprising magnesium and aqueous ammonia, after adjusting the pH of the resultant mixed liquid to fall within the range of from 6 to 12, if the pH of the resultant mixed liquid is not within the range of from 6 to 12, to form a precipitate ~~containing~~ comprising at least magnesium and [[A]] element A; [[and]]

3) separating [[the]] said precipitate ~~containing at least magnesium and A element formed in the step 2)~~ from a solution ~~containing~~ comprising at least molybdenum to obtain said precipitate and a [[(]] recovered molybdenum-containing liquid[[)]]; and

4) forming a precipitate comprising at least molybdenum by adjusting a pH of said recovered molybdenum-containing liquid to 3 or less, and separating the precipitate thus formed from the solution, to obtain a recovered molybdenum-containing precipitate,

wherein said molybdenum-containing material, which comprises at least molybdenum, element A and element X, is suitable as a catalyst for the production of methacrylic acid through gas-phase catalytic oxidation of methacrolein; and

wherein said molybdenum-containing material has a composition represented by the following formula (2):

$$A_aMo_bY'_cCu_fV_gX_dO_e \quad (2)$$

wherein,

Mo, Cu, V and O represent molybdenum, copper, vanadium and oxygen, respectively;

A represents phosphorus and/or arsenic;

Y' represents at least one element selected from the group consisting of iron, cobalt, nickel, zinc, magnesium, calcium, strontium, barium, titanium, chromium, tungsten, manganese, silver, boron, silicon, aluminum, gallium, germanium, tin, lead, antimony, bismuth, niobium, tantalum, zirconium, indium, sulfur, selenium, tellurium, lanthanum and cerium;

X represents at least one element selected from the group consisting of potassium, rubidium, cesium and thallium; and

subscripts a, b, c', f, g, d and e represent an atomic ratio of each element, respectively;

when b is 12, a is in the range of from 0.1 to 3, c' is in the range of from 0 to 2.98, f is in the range of from 0.l01 to 2.99, q is in the range of from 0.01 to 2.99, d is in the range of from 0.01 to 3 and e represents the atomic ratio of oxygen necessary for fulfilling the requirement of the valence of each element above, and (c' + f + g) is in the range of from 0.02 to 3.

Claims 2-10 (Canceled).

Claim 11 (New): A method for producing a catalyst suitable for producing methacrylic acid through gas-phase catalytic oxidation of methacrolein, said method comprising:

1) providing a molybdenum recovered by the method according to claim 1 as a molybdenum raw material, andoptionally, dissolving or dispersing said molybdenum raw material in water to give a solution or slurry,

2) adding other raw materials containing Cu, V, A element, element Y' and element X to the solution or slurry, and then adding an amount of ammonia to give a raw catalyst solution or slurry,

3) drying the raw catalyst solution or slurry, and calcining to give a catalyst powder,

4) molding the catalyst powder, and optionally, calcining;

wherein said catalyst has a composition represented by the following formula (2):

$$A_aMo_bY'_cCu_fV_gX_dO_e \qquad (2)$$

wherein,

Mo, Cu, V and O represent molybdenum, copper, vanadium and oxygen, respectively;

A represents phosphorus and/or arsenic;

Y' represents at least one element selected from the group consisting of iron, cobalt, nickel, zinc, magnesium, calcium, strontium, barium, titanium, chromium, tungsten, manganese, silver, boron, silicon, aluminum, gallium, germanium, tin, lead, antimony, bismuth, niobium, tantalum, zirconium, indium, sulfur, selenium, tellurium, lanthanum and cerium;

X represents at least one element selected from the group consisting of potassium, rubidium, cesium and thallium; and

subscripts a, b, c', f, g, d and e represent an atomic ratio of each element, respectively;

when b is 12, a is in the range of from 0.1 to 3, c' is in the range of from 0 to 2.98, f is in the range of from 0.01 to 2.99, g is in the range of from 0.01 to 2.99, d is in the range of from 0.01 to 3 and e represents the atomic ratio of oxygen necessary for fulfilling the requirement of the valence of each element above, and (c' + f + g) is in the range of from 0.02 to 3.

Claim 12 (New): The method according to claim 11, wherein a molybdenum compound other than the recovered molybdenum is used together with the recovered molybdenum as a molybdenum raw material.

Claim 13 (New): The method according to claim 11 or 12, wherein an amount of ammonia is in the range of 1 to 17 moles per 12 atoms of molybdenum.

Claim 14 (New): The method according to claim 11 or 12, wherein a temperature of the solution or slurry in step 2) is 0 to 40°C less than the temperature when the catalyst is produced without use of the recovered molybdenum.

Claim 15 (New): The method according to claim 13, wherein a temperature of the solution or slurry in step 2) is 0 to 40°C less than the temperature when the catalyst is produced without use of the recovered molybdenum.

Claim 16 (New): The method according to claim 1, wherein said molybdenum-containing material is a spent catalyst used in a reaction for producing methacrylic acid through gas-phase catalytic oxidation of methacrolein or in a reaction for producing methacrylic acid through oxidative dehydrogenation of isobutylic acid.

Claim 17 (New): The method according to claim 1, wherein the pH is step 1) is 8.5 to 13.

Claim 18 (New): The method according to claim 1, wherein said alkali is sodium hydroxide, potassium hydroxide, cesium hydroxide, sodium carbonate or aqueous ammonia.

Claim 19 (New): The method according to claim 1, further comprising:

when a catalyst is totally or partially in a reduced state, oxidizing said catalyst by calcination in air, chlorination or hydrogen peroxide treatment before the alkali addition, or by chlorination or hydrogen peroxide treatment after the alkali addition.

Claim 20 (New): The method according to claim 1, wherein the compound containing magnesium is magnesium chloride, magnesium sulfate or magnesium nitrate.

Claim 21 (New): The method according to claim 1, further comprising holding the liquid for 0.5 to 24 hours after adding the compound containing magnesium and aqueous ammonia.

Claim 22 (New): The method according to claim 1, further comprising:

holding the liquid for 0.5 to 24 hours after adjusting the pH of the recovered molybdenum-containing liquid.

Claim 23 (New): The method according to claim 1, further comprising:

removing vanadium, if present.

Claim 24 (New): The method according to claim 1, wherein said recovered molybdenum-containing precipitate is free of element A.